

Name _____ Date _____ Hr. _____

Lab Activity: Using Metric Tools and Conversions



Introduction: In many scientific investigations, precise measurements must be made before observations can be interpreted. For scientific work, the International System of Units (SI) is used. In SI, All units are based on the number 10. In this lab you learn how to determine the necessary decimal place appropriate for several different measuring tools and be able to convert these measurements into to other SI units.

Problem: How are metric units of measurement used in the laboratory?

Materials:

Metric Ruler	100 mL graduated cylinder
400 mL beaker of water	Triple beam balance
Thermometer	3 pennies

Safety: Use caution with all glassware.

Procedure:

Part A: Measuring Length

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1. Measure the line above in centimeters with the appropriate decimal places based on your measuring tool's accuracy.

_____ cm

2. Use the metric conversions chart to convert the measurement of your line to...
 - a. Meters = _____
 - b. Millimeters = _____
 - c. Decameters = _____

Part B: Measuring Volume

Fill a 400 mL beaker to the 75 mL line. Pour the water into the 100 mL graduated cylinder and record the measurement as accurately as the cylinder allows.

_____ mL

Convert the volume to:

a. Liters = _____

b. Centiliters = _____

Part C. Measuring Mass:

1. Using your balance, find the mass in grams of three pennies as accurately as the balance allows

_____ g

Convert to:

a. _____ mg

b. _____ kg

Part D. Measuring Temperature

1. Measure the temperature of a beaker of tap water using the Celsius thermometer.

_____ degrees Celsius

Part E. Analysis:

1. What is the largest mass of an object your balance can measure?

2. Why is it easier to convert meters to centimeters than it is to convert miles to feet?

3. How would you find the mass of a certain amount of water that you poured into a paper cup?